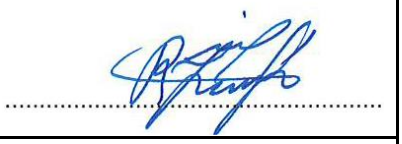
RF-EXPOSURE REPORT

FCC 47 CFR Part 2.1091
ISED RSS-102

Maximum permissible exposure

Report Reference No	G0M-2303-1961-TFC091MP01-V04
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Test Firm Designation Number: DE0008 ISED Testing Laboratory site: 3470A
Applicant	Navico Inc.
Address	4500 S. 129th East Avenue, Ste. 200 OK 74134 Tulsa USA
Test Specification	According to FCC/ISED rules
Standard	FCC 47 CFR 2.1091 ISED RSS-102 Issue 6
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Marine and recreational IoT Gateway and vessel management system
Model(s)	Connect 1 / 80-911-0270-00
Additional Model(s)	None
Brand Name(s)	CZone
Hardware Version(s)	E4
Software Version(s)	emc_tests_op11587 / 1.0
FCC ID	RAYE3801
IC	978B-E3801
Test Result	**PASSED**

Possible test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of performance	2025-02-05	
Date of receipt of test item	N/A	
Report:		
Compiled by	Azamat Ibraimov	
Tested by (+ signature) (Responsible for Test)	Stephan Liebich	
Approved by (+ signature) (Senior Radio Expert)	Radwan Jaafar	
Date of Issue	2025-03-11	
Total number of pages	29	
General Remarks:		

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

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The above equipment has been tested by Eurofins Product Service GmbH, and found compliance with the requirements of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Compliance of electromagnetic emission from electronic and electrical equipment with the basic restrictions usually is determined by measurements and, in some cases, calculation of the exposure level. If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions.

Any relevant compliance assessment procedure which is consistent with the state of the art, reproducible and gives valid results can be used.

For transmitters intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.
Additional Comments:
RF-Exposure calculation is based on measurement results from reference documents.

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2024-12-19	Initial Release	--
02	2025-01-14	Replaced document: G0M-2303-1961-TFC091MP01-V01 Replaced by: G0M-2303-1961-TFC091MP01-V02 Reason: - Reference Documents updated	A. Ibraimov
03	2025-02-07	Replaced document: G0M-2303-1961-TFC091MP01-V02 Replaced by: G0M-2303-1961-TFC091MP01-V03 Reason: - Reference Documents updated - RF-Exposure recalculated	A. Ibraimov
04	2025-03-11	Replaced document: G0M-2303-1961-TFC091MP01-V03 Replaced by: G0M-2303-1961-TFC091MP01-V04 Reason: - Reference Documents updated	A. Ibraimov

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EIRP	Equivalent Isotropic Radiated Power
EUT	Equipment Under Test
MPE	Maximum Permissible Exposure

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	Marine and recreational IoT Gateway and vessel management system			
Model	Connect 1 / 80-911-0270-00			
Additional Model(s)	None			
Brand Name(s)	CZone			
Sample Identification	EUT #	Sample-ID	Serial Number	Date of receipt
	See comment	--	--	--
Hardware Version(s)	E4			
Software Version(s)	emc_tests_op11587 / 1.0			
PMN	Connect 1			
HVIN	E4/A			
FVIN	1.18.0			
HMN	n/a			
FCC ID	RAYE3801			
IC	978B-E3801			
Equipment type	End Product			
Number of antenna ports	4			
Number of radios	4			
Radio Module 1	Type	Bluetooth 5.0 Modul		
	Model	AW-CM358SM		
	Manufacturer	AzureWave		
	HW Version	unspecified		
	SW Version	unspecified		
	FCC-ID	TLZ-CM358SM		
	IC	6100A-CM358SM		
Antenna 1	Type	External antenna		
	Model	JC- 2458E1 08		
	Manufacturer	JC Antenna		
	Gain	Max 2.6 dBi @ 2.4-2.5 GHz Max 4.0 dBi @ 4.9-5.8 GHz		
Radio Module 2	Type	IEEE 802.11 b, g, a, ac, n		
	Model	AW-CM258SM		
	Manufacturer	AzureWave		
	HW Version	unspecified		
	SW Version	unspecified		
	FCC-ID	TLZ-CM358SM		
	IC	6100A-CM358SM		
Antenna 2	Type	External antenna		
	Model	JC- 2458E1 08		
	Manufacturer	JC Antenna		
	Gain	Max 2.6 dBi @ 2.4-2.5 GHz Max 4.0 dBi @ 4.9-5.8 GHz		

Radio Module 3	Type	Mobile Communication Modul
	Model	ME910G1-W1
	Manufacturer	Telit
	HW Version	unspecified
	SW Version	unspecified
	FCC-ID	RI7ME910G1W1
	IC	5131A-ME910G1W1
Antenna 3	Type	External antenna
	Model	JCG913L-2
	Manufacturer	JC Antenna
	Gain	3 dBi
Radio Module 4	Type	SRD Modul 902 – 928 MHz
	Model	unspecified
	Manufacturer	unspecified
	HW Version	unspecified
	SW Version	unspecified
	FCC-ID	unspecified
	IC	unspecified
Antenna 4	Type	External antenna
	Model	JCG016-2M-RPSMA-MAG-ADH
	Manufacturer	JC Antenna
	Gain	2.0 dBi
Supply Voltage	V_{NOM}	13.8 V DC
Dedicated AC/DC-Adaptor	None	
Environment	General public	
Comment: Sample is not required. The Exposure evolution based on results from reference documents		

1.1 Reference Documents

Document Type	Document No.	Issued by	Date
RADIO REPORT	G0M-2303-1961-TFC247DT-V06	Eurofins Product Service GmbH	2025-03-11
RADIO REPORT	G0M-2303-1961-TFC247WF-V06	Eurofins Product Service GmbH	2025-03-11
RADIO REPORT	G0M-2303-1961-TFC247BL-V06	Eurofins Product Service GmbH	2025-03-11
RADIO REPORT	G0M-2303-1961-TFCMOCORSE-V07	Eurofins Product Service GmbH	2025-03-11
RADIO REPORT	G0M-2303-1961-TFC407WF-V04	Eurofins Product Service GmbH	2025-03-11
FCC/ISED Test Report	50289118 001	TÜV Rheinland (Shenzhen) Co., Ltd.	2020-01-15
FCC/ISED Test Report	50289118 002	TÜV Rheinland (Shenzhen) Co., Ltd.	2020-01-15
ANTENNA DATA SHEET	JC- 2458E1 08	JIAXING JINCHANG ELECTRONIC TECHNOLOGY CO.,LTD	2024-03-01
ANTENNA DATA SHEET	JCG016-2M-RPSMA-MAG-ADH	JIAXING JINCHANG ELECTRONIC TECHNOLOGY CO.,LTD	2024-04-16
ANTENNA DATA SHEET	JCG913L-2	JIAXING JINCHANG ELECTRONIC TECHNOLOGY CO.,LTD	2024-03-01

1.2 Power density radiation sources

Mode	Operating Frequency [MHz]	Maximum conducted power [dBm]	Maximum radiated power [dBm EIRP]	Maximum duty cycle [%]	Maximum antenna gain [dBi]	Maximum antenna diameter [cm]
Bluetooth	2402	2.064	4.664	100	2.6	N/A
	2440	1.996	4.596	100	2.6	N/A
	2480	1.817	4.417	100	2.6	N/A
SRD 915 MHz	906.5	10.60	12.60	100	2	N/A
	914.5	10.96	12.96	100	2	N/A
	922.5	10.81	12.81	100	2	N/A
IEEE 802.11 (2.4 GHz)	2412	18.09	20.69	100	2.6	N/A
	2437	20.32	22.92	100	2.6	N/A
	2462	18.15	20.75	100	2.6	N/A
IEEE 802.11 (U-NII-1)	5200	21.32	25.32	100	4	N/A
IEEE 802.11 (U-NII-2C)	5580	18.97	22.97	100	4	N/A
IEEE 802.11 (U-NII-3)	5745	21.35	25.35	100	4	N/A
LTE FDD2	1880.0	21.4	24.4	100	3	N/A
LTE FDD4	1732.5	21.16	24.16	100	3	N/A
LTE FDD12	707.5	21.39	24.39	100	3	N/A
LTE FDD13	782.0	21.6	24.6	100	3	N/A
Comment: --						

1.3 Field strength radiation sources

None

1.4 Concurrent Sources

Concurrent operating conditions
Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD2
Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD4
Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD12
Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD13
Comment: --

2 Result Summary

FCC MPE Evaluation - Single radiation sources					
Product Standard Reference	**Requirement**	**Reference Method**	**Mode**	**Distance [m]**	**Verdict**
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	Bluetooth	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	SRD 915 MHz	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	IEEE 802.11 (2.4 GHz)	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	IEEE 802.11 (U-NII-1)	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	IEEE 802.11 (U-NII-2C)	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	IEEE 802.11 (U-NII-3)	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	LTE FDD2	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	LTE FDD4	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	LTE FDD12	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	LTE FDD13	0.20	PASS
Comment: --					

ISED MPE Evaluation - Single radiation sources					
Product Standard Reference	**Requirement**	**Reference Method**	**Mode**	**Distance [m]**	**Verdict**
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	Bluetooth	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	SRD 915 MHz	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	IEEE 802.11 (2.4 GHz)	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	IEEE 802.11 (U-NII-1)	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	IEEE 802.11 (U-NII-2C)	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	IEEE 802.11 (U-NII-3)	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	LTE FDD2	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	LTE FDD4	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	LTE FDD12	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	LTE FDD13	0.20	PASS
Comment: --					

FCC MPE Evaluation - Multi-transmitter sources					
Product Standard Reference	**Requirement**	**Reference Method**	**Mode**	**Distance [m]**	**Verdict**
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD2	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD4	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD12	0.20	PASS
47 CFR 2.1091	Maximum permissible exposure	FCC KDB 447498	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD13	0.20	PASS
Comment: --					

ISED MPE Evaluation - Multi-transmitter sources					
Product Standard Reference	**Requirement**	**Reference Method**	**Mode**	**Distance [m]**	**Verdict**
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD2	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD4	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD12	0.20	PASS
ISED RSS-102	Maximum permissible exposure	ISED RSS-102	Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD13	0.20	PASS
Comment: --					

3 RF-Exposure classification

RF-Exposure Categories	
Fixed	A fixed device is defined as a device physically secured at one fixed location and cannot be easily re-located.
Mobile	A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.
Portable	A portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

RF-Exposure Categories	
Occupational / Controlled	Limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
General population / Uncontrolled	Exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

4 RF-Exposure limits

FCC Limits – General Population / Uncontrolled Exposure				
Frequency range [MHz]	**Electric field strength [V/M]**	**Magnetic field strength [A/M]**	**Power density [W/m²]**	**Averaging time [min]**
0.3 – 1.34	614	1.63	1000	30
1.34 – 30	824/f	2.19/f	$1800/f^2$	30
30 – 300	27.5	0.073	2	30
300 – 1500	-	-	f/150	30
1500 – 100000	-	-	10.0	30

FCC Limits – Occupational / Controlled Exposure				
Frequency range [MHz]	**Electric field strength [V/M]**	**Magnetic field strength [A/M]**	**Power density [W/m²]**	**Averaging time [min]**
0.3 – 3.0	614	1.63	1000	6
3.0 – 30	1842/f	4.89/f	$9000/f^2$	6
30 – 300	61.4	0.163	10.0	6
300 – 1500	-	-	f/30	6
1500 – 100000	-	-	50	6

ISED Limits – General Population / Uncontrolled Exposure				
Frequency range [MHz]	**Electric field strength [V/M]**	**Magnetic field strength [A/M]**	**Power density [W/m²]**	**Averaging time [min]**
0.003 – 10	83	90	-	Instantaneous
0.1 – 10	-	0.73/f	-	6
1.1 – 10	$87/f^{0.5}$	-	-	6
10 – 20	27.46	0.0728	2	6
20 – 48	$58.07/f^{05}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48 – 300	22.06	0.05852	1.291	6
300 – 6000	$3.142 \cdot f^{0.3417}$	$0.008335 \cdot f^{0.3417}$	$0.02619 \cdot f^{0.6834}$	6
6000 – 15000	61.4	0.163	10	6
15000 – 150000	61.4	0.163	10	$616000/f^{1.2}$
150000 – 300000	$0.158 \cdot f^{0.5}$	$4.21 \cdot 10^{-4} \cdot f^{0.5}$	$6.67 \cdot 10^{-5} \cdot f$	$616000/f^{1.2}$

ISED Limits – Occupational / Controlled Exposure				
Frequency range [MHz]	**Electric field strength [V/M]**	**Magnetic field strength [A/M]**	**Power density [W/m²]**	**Averaging time [min]**
0.003 – 10	170	180	-	Instantaneous
0.1 – 10	-	1.6/f	-	6
1.1 – 10	$193/f^{0.5}$	-	-	6
10 – 20	61.4	0.163	10	6
20 – 48	$129.8/f^{05}$	$0.3444/f^{0.25}$	$44.72/f^{0.5}$	6
48 – 300	49.33	0.1309	6.455	6
300 – 6000	$15.60 \cdot f^{0.25}$	$0.04138 \cdot f^{0.25}$	$0.6455 \cdot f^{0.5}$	6
6000 – 15000	137	0.364	50	6
15000 – 150000	137	0.364	50	$616000/f^{1.2}$
150000 – 300000	$0.354 \cdot f^{0.5}$	$9.40 \cdot 10^{-4} \cdot f^{0.5}$	$3.33 \cdot 10^{-4} \cdot f$	$616000/f^{1.2}$

5 RF-Exposure Evaluation

Evaluation Relations

$$\lambda[m] = \frac{c\left[\frac{m}{s}\right]}{f[Hz]} \; ; \; R_{FF}[m] \geq \frac{2 \cdot D[m]^2}{\lambda[m]}$$

$$S[W/m^2] = \frac{P_{E.I.R.P.}[W]}{4\pi R[m]^2} \; ; \; R[m] = \sqrt{\frac{P_{E.I.R.P.}[W]}{4\pi S[W/m^2]}}$$

$$DCC\ [dB] = 10 \cdot Log_{10}\left(\frac{DC[\%]}{100}\right)$$

$$\sum_{i=1}^{N} \frac{S_i\left[\frac{W}{m^2}\right]}{S_{Li}\left[\frac{W}{m^2}\right]} + \sum_{j=1}^{M} \left(\frac{E_j\left[\frac{V}{m}\right]}{E_{Lj}\left[\frac{V}{m}\right]}\right)^2 + \sum_{k=1}^{O} \left(\frac{H_k\left[\frac{A}{m}\right]}{H_{Lk}\left[\frac{A}{m}\right]}\right)^2 < 1$$

Evaluation Procedure

Standalone operation evaluation:

For each radio and frequency band the worst case transmission mode with the highest peak conducted or radiated power is evaluated at the frequency that results in the most restrictive rf-exposure limit. From the peak power values, antenna gains and duty cycles taken from the reference documents, the source average radiated power values are calculated. From the average radiated power the power densities at antenna far-field distance is calculated. The distance from the radiation source for compliance power density is calculated. If the separation distance is lower than the far-field distance, the far-field distance is given as compliance separation distance because the plane wave power density assessment is only valid in the far-field of the radiation source.

For radiation sources for which the average electric and magnetic fields are measured using field probes, the measured field strength values are compared to the reference limits. For those sources no calculations are performed. Compliance with the reference values is determined with the near field measurements.

Concurrent operation evaluation:

First the evaluation distance is set to an appropriate value. For all radiation sources for which power densities are calculated, the power densities at the evaluation distance are calculated and for all other sources the electric or magnetic field strengths are measured using field probes. Finally the ratios of the power densities and/or field strength values and the corresponding limits are calculated and summed and the sum is compared to the maximum of 1.

6 Single Source Evaluation Results - FCC

Bluetooth			
Transmission Mode			
Transmission Frequency (f) [MHz]	2402	2440	2480
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	4.664	4.596	4.417
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	4.66	4.60	4.42
Power density			
Compliance power density limit [W/m^2]	10.000	10.000	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.006	0.006	0.006
Power density ratio @ 0.20 m	0.00	0.00	0.00
Distance for compliance power density (S=SL) [m]	0.005	0.005	0.005
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

SRD 915 MHz			
Transmission Mode			
Transmission Frequency (f) [MHz]	906.5	914.5	922.5
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	12.60	12.96	12.81
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	12.60	12.96	12.81
Power density			
Compliance power density limit [W/m^2]	6.043	6.097	6.150
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.036	0.039	0.038
Power density ratio @ 0.20 m	0.01	0.01	0.01
Distance for compliance power density (S=SL) [m]	0.015	0.016	0.016
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

IEEE 802.11 (2.4 GHz)			
Transmission Mode			
Transmission Frequency (f) [MHz]	2412	2437	2462
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	20.69	22.92	20.75
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	20.69	22.92	20.75
Power density			
Compliance power density limit [W/m^2]	10.000	10.000	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.233	0.390	0.236
Power density ratio @ 0.20 m	0.02	0.04	0.02
Distance for compliance power density (S=SL) [m]	0.031	0.039	0.031
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

IEEE 802.11 (U-NII-1)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5200
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	25.32
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	25.32
Power density	
Compliance power density limit [W/m^2]	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.677
Power density ratio @ 0.20 m	0.07
Distance for compliance power density (S=SL) [m]	0.052
Compliance	
Verdict	PASS
Comment: --	

IEEE 802.11 (U-NII-2C)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5580
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	22.97
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	22.97
Power density	
Compliance power density limit [W/m^2]	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.394
Power density ratio @ 0.20 m	0.04
Distance for compliance power density (S=SL) [m]	0.040
Compliance	
Verdict	PASS
Comment: --	

IEEE 802.11 (U-NII-3)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5745
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	25.35
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	25.35
Power density	
Compliance power density limit [W/m^2]	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.682
Power density ratio @ 0.20 m	0.07
Distance for compliance power density (S=SL) [m]	0.052
Compliance	
Verdict	PASS
Comment: --	

LTE FDD2	
Transmission Mode	
Transmission Frequency (f) [MHz]	1880.0
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.4
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.40
Power density	
Compliance power density limit [W/m^2]	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.548
Power density ratio @ 0.20 m	0.05
Distance for compliance power density (S=SL) [m]	0.047
Compliance	
Verdict	PASS
Comment: --	

LTE FDD4	
Transmission Mode	
Transmission Frequency (f) [MHz]	1732.5
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.16
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.16
Power density	
Compliance power density limit [W/m^2]	10.000
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.518
Power density ratio @ 0.20 m	0.05
Distance for compliance power density (S=SL) [m]	0.046
Compliance	
Verdict	PASS
Comment: --	

LTE FDD12	
Transmission Mode	
Transmission Frequency (f) [MHz]	707.5
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.39
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.39
Power density	
Compliance power density limit [W/m^2]	4.717
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.547
Power density ratio @ 0.20 m	0.12
Distance for compliance power density (S=SL) [m]	0.068
Compliance	
Verdict	PASS
Comment: --	

LTE FDD13	
Transmission Mode	
Transmission Frequency (f) [MHz]	782.0
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.6
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.60
Power density	
Compliance power density limit [W/m^2]	5.213
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.574
Power density ratio @ 0.20 m	0.11
Distance for compliance power density (S=SL) [m]	0.066
Compliance	
Verdict	PASS
Comment: --	

7 Single Source Evaluation Results - ISED

Bluetooth			
Transmission Mode			
Transmission Frequency (f) [MHz]	2402	2440	2480
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	4.664	4.596	4.417
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	4.66	4.60	4.42
Power density			
Compliance power density limit [W/m^2]	5.351	5.409	5.469
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.006	0.006	0.006
Power density ratio @ 0.20 m	0.00	0.00	0.00
Distance for compliance power density (S=SL) [m]	0.007	0.007	0.006
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

SRD 915 MHz			
Transmission Mode			
Transmission Frequency (f) [MHz]	906.5	914.5	922.5
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	12.60	12.96	12.81
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	12.60	12.96	12.81
Power density			
Compliance power density limit [W/m^2]	2.749	2.766	2.782
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.036	0.039	0.038
Power density ratio @ 0.20 m	0.01	0.01	0.01
Distance for compliance power density (S=SL) [m]	0.023	0.024	0.023
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

IEEE 802.11 (2.4 GHz)			
Transmission Mode			
Transmission Frequency (f) [MHz]	2412	2437	2462
Antenna far-field distance			
Maximum antenna diameter (D) [m]	N/A	N/A	N/A
Transmission wavelength (λ) [m]	N/A	N/A	N/A
Antenna far-field distance (R_{FF}) [m]	N/A	N/A	N/A
Source average power			
Peak radiated power (PR) [dBm EIRP]	20.69	22.92	20.75
Maximum transmission duty cycle (DC)	1.00	1.00	1.00
Duty cycle correction (DCC) [dB]	0.00	0.00	0.00
Average radiated power (PRAVG) [dBm EIRP]	20.69	22.92	20.75
Power density			
Compliance power density limit [W/m^2]	5.366	5.404	5.442
Power density (S) @ Antenna far-field distance [W/m^2]	N/A	N/A	N/A
Power density (S) @ 0.20 m [W/m^2]	0.233	0.390	0.236
Power density ratio @ 0.20 m	0.04	0.07	0.04
Distance for compliance power density (S=SL) [m]	0.042	0.054	0.042
Compliance			
Verdict	PASS	PASS	PASS
Comment: --			

IEEE 802.11 (U-NII-1)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5200
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	25.32
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	25.32
Power density	
Compliance power density limit [W/m^2]	9.071
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.677
Power density ratio @ 0.20 m	0.07
Distance for compliance power density (S=SL) [m]	0.055
Compliance	
Verdict	PASS
Comment: --	

IEEE 802.11 (U-NII-2C)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5580
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	22.97
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	22.97
Power density	
Compliance power density limit [W/m^2]	9.519
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.394
Power density ratio @ 0.20 m	0.04
Distance for compliance power density (S=SL) [m]	0.041
Compliance	
Verdict	PASS
Comment: --	

IEEE 802.11 (U-NII-3)	
Transmission Mode	
Transmission Frequency (f) [MHz]	5745
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	25.35
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	25.35
Power density	
Compliance power density limit [W/m^2]	9.710
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.682
Power density ratio @ 0.20 m	0.07
Distance for compliance power density (S=SL) [m]	0.053
Compliance	
Verdict	PASS
Comment: --	

LTE FDD2	
Transmission Mode	
Transmission Frequency (f) [MHz]	1880.0
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.4
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.40
Power density	
Compliance power density limit [W/m^2]	4.526
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.548
Power density ratio @ 0.20 m	0.12
Distance for compliance power density (S=SL) [m]	0.070
Compliance	
Verdict	PASS
Comment: --	

LTE FDD4	
Transmission Mode	
Transmission Frequency (f) [MHz]	1732.5
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.16
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.16
Power density	
Compliance power density limit [W/m^2]	4.280
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.518
Power density ratio @ 0.20 m	0.12
Distance for compliance power density (S=SL) [m]	0.070
Compliance	
Verdict	PASS
Comment: --	

LTE FDD12	
Transmission Mode	
Transmission Frequency (f) [MHz]	707.5
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.39
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.39
Power density	
Compliance power density limit [W/m^2]	2.321
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.547
Power density ratio @ 0.20 m	0.24
Distance for compliance power density (S=SL) [m]	0.097
Compliance	
Verdict	PASS
Comment: --	

LTE FDD13	
Transmission Mode	
Transmission Frequency (f) [MHz]	782.0
Antenna far-field distance	
Maximum antenna diameter (D) [m]	N/A
Transmission wavelength (λ) [m]	N/A
Antenna far-field distance (R_{FF}) [m]	N/A
Source average power	
Peak radiated power (PR) [dBm EIRP]	24.6
Maximum transmission duty cycle (DC)	1.00
Duty cycle correction (DCC) [dB]	0.00
Average radiated power (PRAVG) [dBm EIRP]	24.60
Power density	
Compliance power density limit [W/m^2]	2.485
Power density (S) @ Antenna far-field distance [W/m^2]	N/A
Power density (S) @ 0.20 m [W/m^2]	0.574
Power density ratio @ 0.20 m	0.23
Distance for compliance power density (S=SL) [m]	0.096
Compliance	
Verdict	PASS
Comment: --	

8 Concurrent Evaluation Results - FCC

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD2	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.04
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD2	0.05
Sum of MPE Ratios	
Sum	0.28
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD4	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.04
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD4	0.05
Sum of MPE Ratios	
Sum	0.28
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD12	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.04
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD12	0.12
Sum of MPE Ratios	
Sum	0.35
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD13	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.04
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD13	0.11
Sum of MPE Ratios	
Sum	0.34
Compliance	
Verdict	PASS

9 Concurrent Evaluation Results - ISED

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD2	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.07
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD2	0.12
Sum of MPE Ratios	
Sum	0.38
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD4	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.07
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD4	0.12
Sum of MPE Ratios	
Sum	0.38
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD12	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.07
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD12	0.24
Sum of MPE Ratios	
Sum	0.50
Compliance	
Verdict	PASS

Bluetooth + SRD 915 MHz + IEEE 802.11 (2.4 GHz) + IEEE 802.11 (U-NII-1) + IEEE 802.11 (U-NII-2C) + IEEE 802.11 (U-NII-3) + LTE FDD13	
Information	
Number of concurrent modes	7
Evaluation distance [m]	0.20
Maximum MPE Ratios	
Bluetooth	0.00
SRD 915 MHz	0.01
IEEE 802.11 (2.4 GHz)	0.07
IEEE 802.11 (U-NII-1)	0.07
IEEE 802.11 (U-NII-2C)	0.04
IEEE 802.11 (U-NII-3)	0.07
LTE FDD13	0.23
Sum of MPE Ratios	
Sum	0.49
Compliance	
Verdict	PASS

=== End of test report ===